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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,319	12/16/2005	Satoshi Takahashi	P28448	8216

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EXAMINER	
BARAN, MARY C	
ART UNIT	PAPER NUMBER
2857	

NOTIFICATION DATE	DELIVERY MODE
09/03/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
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Office Action Summary	Application No.	Applicant(s)	
	10/549,319	TAKAHASHI, SATOSHI	
	Examiner	Art Unit	
	MARY C. BARAN	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-7,12-19,21 and 23* is/are allowed.

6)☒ Claim(s) *9,11,20 and 22* is/are rejected.

7)☒ Claim(s) *8 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/16/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 8-10 are objected to because of the following informalities: claim 8 page 5 line 2, page 5 claim 9 line 14 and page 6 claim 10 line 12, "two timing period" should be -- two timing periods --. Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 9, 11, 20 and 22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 9, 11, 20 and 22 present a program of instructions. This program of instructions is considered to be a data structure that does not define any functional interrelationships with the other claimed aspects of the invention which permit the data structure's functionality to be realized. It has been held that such a data structure is considered to be non-statutory under 35 U.S.C. 101 (See e.g., Warmerdam 33 F.3d at 1361. 31 USPQZd at 1760).

Further, apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement (See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036). Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For

example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application. In the instant case, the limitations of claims 9, 11, 20 and 22 only provide a program of instructions configured to execute processes. These processes, however, are not actually being executed, and therefore the claimed limitations do not provide any “useful, concrete, and tangible” result.

Allowable Subject Matter

3. Claims 1-7, 12-19, 21 and 23 are allowed, and claims 8 and 10 would be allowable except for the formal matters listed above.

4. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-7 are allowable over the prior art of record because the combination of limitations which recite a wave detection device comprising: a first signal output means that outputs a first signal obtained by adding the digital input signal to a predetermined signal; a second signal means that outputs a second signal; and a frequency domain transform means that obtains the first signal and the second signal in timing

corresponding to every predetermined integer multiple of the one timing period to obtain data which is the input signal transformed into the frequency domain, wherein the predetermined signal is a signal obtained by subtracting a signal obtained by delaying the first signal by the two timing periods from a signal obtained by multiplying a signal obtained by delaying the first signal by the one timing period by a predetermined coefficient is not found, taught or suggested by the prior art of record.

Claim 8 are allowable over the prior art of record, except for the formal matters listed above, because the combination of limitations which recite a wave detection method comprising: a first signal output step of outputting a first signal obtained by adding the digital input signal to a predetermined signal; a second signal output step of outputting a second signal; and a frequency domain transform step of obtaining the first signal and the second signal in timing corresponding to every predetermined integer multiple of the one timing period to obtain data which is the input signal transformed into the frequency domain, wherein the predetermined signal is a signal obtained by subtracting a signal obtained by delaying the first signal by the two timing periods from a signal obtained by multiplying a signal obtained by delaying the first signal by the one timing period by a predetermined coefficient is not found, taught or suggested by the prior art of record.

Claim 10 is allowable over the prior art of record, except for the formal matters listed above, because the combination of limitations which recite a computer-readable medium having a program of instructions for execution by a computer to perform a wave detection process, said wave detection process comprising: a first signal output step of

outputting a first signal obtained by adding the digital input signal to a predetermined signal; a second signal output step of outputting a second signal; and a frequency domain transform step of obtaining the first signal and the second signal in timing corresponding to every predetermined integer multiple of the one timing period to obtain data which is the input signal transformed into the frequency domain, wherein the predetermined signal is a signal obtained by subtracting a signal obtained by delaying the first signal by the two timing periods form a signal obtained by multiplying a signal obtained by delaying the first signal by the one timing period by a predetermined coefficient is not found, taught or suggested by the prior art of record.

Claim 12 is allowable over the prior art of record because the combination of limitations which recite a computer-readable medium having a program of instructions for execution by a computer to perform a wave detection process of a wave detection device having; a first signal output means that outputs a first signal obtained by adding the digital input signal to a predetermined signal; and a second signal output means that outputs a second signal, said wave detection process comprising: a frequency domain transform step of obtaining the first and the second signal in timing corresponding to every predetermined integer multiple of the one timing period to obtain data which is the input signal transformed into the frequency domain, wherein the predetermined signal is a signal obtained by subtracting a signal obtained by delaying the first signal by the two timing periods from a signal obtained by multiplying a signal obtained by delaying the first signal by the one timing period by a predetermined coefficient is not found, taught or suggested by the prior art of record.

Claims 13-19 are allowable over the prior art of record because the combination of limitations which recite a wave detection device comprising: an adder that outputs a first signal obtained by adding the digital input signal to a predetermined signal; a delayer that outputs a second signal; and a frequency domain transformer that obtains the first signal and the second signal in timing corresponding to every predetermined integer multiple of the one timing period to obtain data which is the input signal transformed into the frequency domain, wherein the predetermined signal is a signal obtained by subtracting a signal obtained by delaying the first signal by the two timing periods from a signal obtained by multiplying a signal obtained by delaying the first signal by the one timing period by a predetermined coefficient is not found, taught or suggested by the prior art of record.

Claim 21 is allowable over the prior art of record because the combination of limitations which recite a computer-readable medium having a program of instructions for execution by a computer to perform a wave detection process, the wave detection process comprising: outputting a first signal obtained by adding the digital input signal to a predetermined signal; outputting a second signal; and obtaining the first and the second signal in timing corresponding to every predetermined integer multiple of the one timing period to obtain data which is the input signal transformed into the frequency domain, wherein the predetermined signal is a signal obtained by subtracting a signal obtained by delaying the first signal by the two timing periods from a signal obtained by multiplying a signal obtained by delaying the first signal by the one timing period of a predetermined coefficient is not found, taught or suggested by the prior art of record.

Claim 23 is allowable over the prior art of record because the combination of limitations which recite a computer-readable medium having a program of instructions for execution by a computer to perform a wave detection process of a wave detection device having an adder that outputs a first signal obtained by adding the digital input signal to a predetermined signal; and a delayer that outputs a second signal, the wave detection process comprising: obtaining the first signal and the second signal in timing corresponding to every predetermined integer multiple of the one timing period to obtain data which is the input signal transformed into the frequency domain, wherein the predetermined signal is a signal obtained by subtracting a signal obtained by delaying the first signal by the two timing periods from a signal obtained by multiplying a signal obtained by delaying the first signal by the one timing period by a predetermined coefficient is not found, taught or suggested by the prior art of record.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Tzannes et al. teach a signal processing utilizing a tree-structured array.

b. Johnston teaches a rate loop processor for perceptual encoder/decoder.

c. Yamaguchi et al. teach an apparatus for and method of measuring clock skew.

d. Grassart teaches a process and device for decoding a code signal.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY C. BARAN whose telephone number is (571)272-2211. The examiner can normally be reached on Monday to Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571) 272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mary Catherine Baran/
31 August 2009